

REMARKS

Claims 1-8, 12-15, 17 and 18 are presently pending. Applicant has amended claims 1 and 3 and has added new claims 21-24 herein. Applicant respectfully requests reconsideration of the claims in view of the following remarks.

Applicant has amended the claims to more succinctly claim particular aspects of the invention. Support for the amendments is found in the specification and in the original claims. Accordingly, applicant submits that no new matter has been introduced by the amendments.

Claims 1-3, 6-7, 12-15 and 17-18 were rejected under 35 U.S.C. § 103(a) based on Danby et al. (U.S. Patent No. 5,061,897) in view of Wang et al. (U.S. Publication No. 2004/0225213).

Referring to independent claim 1, as amended, the claim recites in part:

"a gradient tube extending along an axis, the tube including first and second gradient coils and a conductive compound disposed between the first and second gradient coils, the conductive compound being a glue having a plurality of conductive particles disposed substantially uniformly within the glue, at least a portion of the plurality of conductive particles being in a range of 1-10µm in diameter, the plurality of conductive particles configured to limit a current flowing through the conductive compound to less than 10 microamps to reduce electrostatic discharges in the glue."

Referring to Danby et al., the reference is directed to a nuclear magnetic resonance scanner. Referring to Figure 6 of Danby et al., a scanner includes a gradient coil 120, an eddy current limiting means 300, and a pole facing piece 165. Further, a nonconductive adhesive material is disposed between the eddy current limiting means and the pole facing piece 165. See Danby et al., column 8, lines 11-16. However, after carefully reviewing Danby et al., applicant submits that the reference does not provide any teaching of: "a gradient tube extending along an axis, the tube including first and second gradient coils and a conductive compound disposed between the first and second gradient coils, the conductive compound being a glue having a

plurality of conductive particles disposed substantially uniformly within the glue. In fact, Danby et al. does not even mention utilizing conductive particles in a glue. Further, Wang et al. does not provide any teaching of the foregoing limitations.

Further, Danby et al. does not provide any teaching of: "at least a portion of the plurality of conductive particles being in a range of 1-10 μ m in diameter", as recited in independent claim 1 as amended. Further, Wang et al. does not teach the foregoing limitations. Applicant notes that the paragraph [0082] of Wang et al. referred to by the Examiner in the Office Action does mention particles in a range of 2-50 nanometers. However, it is clear that the range of 2-50 nanometers does not encompass a range of 1-10 μ m as recited in claim 1.

Further, Danby et al. does not provide any teaching of: "the plurality of conductive particles configured to limit a current flowing through the conductive compound to less than 10 microamps to reduce electrostatic discharges in the glue", as recited in claim 1 as amended. Further, Wang et al. does not teach the foregoing limitations.

Accordingly, because the combination of Danby et al. and Wang et al. does not teach each and every limitation of claim 1, and claims 2, 3, 6 and 7 which depend from claim 1, applicant submits that claims 1, 2, 3, 6 and 7 are allowable over these references.

Referring to independent claim 12, the claim recites in part:

"a gradient tube extending along an axis, the tube including first and second gradient coils and a potting compound layer disposed between the first and second gradient coils, the potting compound layer having a plurality of conductive particles configured to limit a current flowing through the potting compound layer to less than a predetermined current value to reduce electrostatic discharges in the potting compound layer, the plurality of conductive particles being at least one of silver particles and gold particles."

After carefully reviewing Danby et al., applicant submits that the reference does not provide any teaching of: "the potting compound layer having a plurality of conductive particles configured to limit a current flowing through the potting compound layer to less than a predetermined current value to reduce electrostatic discharges in the potting compound layer" as

recited in claim 12. Further, Wang et al. does not provide any teaching of the foregoing limitations. Further, Danby et al. does not provide any teaching of: "the plurality of conductive particles being at least one of silver particles and gold particles", as recited in claim 12. Further, Wang et al. does not provide any teaching of the foregoing limitations.

Accordingly, because the combination of Danby et al. and Wang et al. does not teach each and every limitation of claim 12, applicant submits that claim 12 is allowable over these references.

Referring to independent claim 13, the claim recites in part:

"disposing a conductive compound between the first gradient coil and a second gradient coil, the conductive compound being a glue having a plurality of conductive particles therein, at least a portion of the plurality of conductive particles being in a range of 1-10 μ m in diameter, the plurality of conductive particles configured to limit a current flowing through the conductive compound to less than a predetermined value to reduce electrostatic discharges in the glue, the conductive compound further having a chemical hardening compound therein."

After carefully reviewing Danby et al., applicant submits that the reference does not provide any teaching of: "the conductive compound being a glue having a plurality of conductive particles therein, at least a portion of the plurality of conductive particles being in a range of 1-10 μ m in diameter", as recited in claim 13. Further, Wang et al. does not provide any teaching of the foregoing limitations. Further, Danby et al. does not provide any teaching of: "the plurality of conductive particles configured to limit a current flowing through the conductive compound to less than a predetermined value to reduce electrostatic discharges in the glue" as recited in claim 13. Further, Wang et al. does not provide any teaching of the foregoing limitations.

Accordingly, because the combination of Danby et al. and Wang et al. does not teach each and every limitation of claim 13, and claims 14, 15, 17 and 18 which depend from claim 13, applicant submits that claims 13, 14, 15, 17 and 18 are allowable over these references.

Applicant further submits that no proper motivation has been identified for the combination of Danby et al. and Wang et al. In particular, applicant notes that neither reference even recognizes the problem being solved by the exemplary embodiments claimed herein. Namely, reducing electrostatic discharges between gradient coils in a gradient tube. While Danby et al. is directed to a NMR device, there is no teaching of the above problem or any solution to the above problem. Further, Wang et al. is directed to an implanted medical device and does not recognize the above problem. Accordingly, because Danby and Wang et al. do not even recognize the problem being solved by the claimed invention, there cannot be any motivation to combine the references to solve the problem.

Claims 4 and 8 were rejected under 35 U.S.C. § 103(a) based on Danby et al. in view of Wang et al., and further in view of Dietz et al. (U.S. Patent No. 6,642,717). Claims 4 and 8 dependent from claim 1 and therefore incorporate all of the limitations of claim 1.

Referring to Danby et al. and Wang et al., the references do not provide any teaching of: "a gradient tube extending along an axis, the tube including first and second gradient coils and a conductive compound disposed between the first and second gradient coils, the conductive compound being a glue having a plurality of conductive particles disposed substantially uniformly within the glue", as recited in independent claim 1 as amended. Further, Dietz et al. does not teach the foregoing limitations. Further, Danby et al. and Wang et al. do not provide any teaching of: "at least a portion of the plurality of conductive particles being in a range of 1-10µm in diameter", as recited in independent claim 1. Further, Dietz et al. does not teach the foregoing limitations. Further, Danby et al. and Wang et al. do not provide any teaching of: "the plurality of conductive particles configured to limit a current flowing through the conductive compound to less than 10 microamps to reduce electrostatic discharges in the glue", as recited in claim 1. Further, Dietz et al. does not teach the foregoing limitations.

Accordingly, because the combination of Danby et al., Wang et al., and Dietz et al. does not teach each and every limitation of claim 1, and claims 4 and 8 which depend from claim 1, applicant submits that claims 4 and 8 are allowable over these references.

Claim 5 was rejected under 35 U.S.C. § 103(a) based on Danby et al. in view of Wang et al., and further in view of Lehne et al. (U.S. Patent No. 5,235,283). Claim 5 depends from claim 1 and therefore incorporates all of the limitations of claim 1.

Referring to Danby et al. and Wang et al., the references do not provide any teaching of: "a gradient tube extending along an axis, the tube including first and second gradient coils and a conductive compound disposed between the first and second gradient coils, the conductive compound being a glue having a plurality of conductive particles disposed substantially uniformly within the glue", as recited in independent claim 1 as amended. Further, Lehne et al. does not teach the foregoing limitations. Further, Danby et al. and Wang et al. do not provide any teaching of: "at least a portion of the plurality of conductive particles being in a range of 1-10µm in diameter", as recited in independent claim 1. Further, Lehne et al. does not teach the foregoing limitations. Further, Danby et al. and Wang et al. do not provide any teaching of: "the plurality of conductive particles configured to limit a current flowing through the conductive compound to less than 10 microamps to reduce electrostatic discharges in the glue", as recited in claim 1. Further, Lehne et al. does not teach the foregoing limitations.

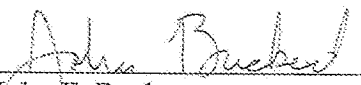
Accordingly, because the combination of Danby et al., Wang et al., and Lehne et al. does not teach each and every limitation of claim 1, and claim 5 which depends from claim 1, applicant submit that claim 5 is allowable over these references.

Applicant has added new claims 21-24. Support for new claims 21-24 can be found in the originally filed specification, figures, and claims. Accordingly, applicant submits that no new matter has been introduced by claims 21-24.

In view of the foregoing remarks, applicant respectfully submits that the instant application is in condition for allowance. Such action is most earnestly solicited. If for any reason the Examiner feels that consultation with applicant's attorney would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below for an interview.

If there are any charges due with respect to this response document or otherwise, please charge them to Deposit Account No. 07-0845.

Respectfully Submitted,
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